

THE INVENTION CLAIMED IS:

1. A method for fabricating a semiconductor heat spreader, comprising:  
providing a unitary metallic plate; and  
forming the unitary metallic plate into:

5 a panel;  
channel walls depending from the panel to define a channel between the  
channel walls and the panel for receiving a semiconductor therein;  
at least two feet extending from respective channel walls for attachment to a  
substrate; and  
10 at least one external reversing bend.

2. The method of claim 1 wherein the feet are selected from an arched foot, a  
stand-off foot, a slotted stand-off foot, a toed foot, a stand-off toed foot, a flat foot, a slotted  
flat foot, a zigzag foot, a box foot, and a combination thereof.

3. The method of claim 1 further comprising forming the feet to accommodate  
15 respective set volumes of adhesive therebeneath for attaching the semiconductor heat  
spreader to a substrate.

4. The method of claim 1 further comprising forming an electromagnetic  
interference shield for the channel.

5. The method of claim 1 further comprising:  
20 providing an additional unitary metallic plate; and  
forming the additional unitary metallic plate into a unitary auxiliary heat spreader  
configured for attachment on top of the semiconductor heat spreader.

6. The method of claim 5 further comprising forming attachment means for  
attaching the unitary auxiliary heat spreader to the semiconductor heat spreader, the  
25 attachment means being selected from tabs, locking tabs, deformable sides, side ledges, side  
clips, clip bosses, center clips, side arms, and a combination thereof.

7. The method of claim 1 wherein forming the unitary metallic plate further  
comprises forming the unitary metallic plate in substantially a single metal forming process  
to also form an integral auxiliary heat spreader located on top of the panel.

8. The method of claim 1 wherein forming the unitary metallic plate further comprises forming the unitary metallic plate in substantially a single metal forming process into a cross-sectional profile that is substantially constant in at least one horizontal direction.

9. A method for fabricating a semiconductor heat spreader, comprising:

5 providing a unitary metallic plate;

forming the unitary metallic plate in substantially a single metal forming process into:  
a panel;

channel walls depending from opposite sides of the panel to define a channel  
between the channel walls and the panel for receiving a semiconductor  
10 therein;

at least two feet extending from respective channel walls on opposite sides of  
the panel for attachment to a substrate, the feet being:

selected from an arched foot, a stand-off foot, a slotted stand-off foot, a  
toed foot, a stand-off toed foot, a flat foot, a slotted flat foot, a  
15 zigzag foot, a box foot, and a combination thereof; and

formed to accommodate respective set volumes of adhesive  
therebeneath for attaching the semiconductor heat spreader to a  
substrate;

a cross-sectional profile that is substantially constant in at least one horizontal  
20 direction; and

at least one external reversing bend.

10. The method of claim 9 further comprising:

providing an additional unitary metallic plate;

forming the additional unitary metallic plate in substantially a single metal forming  
25 process into a unitary auxiliary heat spreader configured for attachment on top  
of the semiconductor heat spreader; and

forming attachment means for attaching the unitary auxiliary heat spreader to the  
semiconductor heat spreader, the attachment means being selected from tabs,  
locking tabs, deformable sides, side ledges, side clips, clip bosses, center clips,  
30 side arms, and a combination thereof.

11. A semiconductor heat spreader comprising a unitary metallic plate having:  
a panel;  
channel walls depending from the panel to define a semiconductor receiving channel  
between the channel walls and the panel;  
5 at least two feet extending from respective channel walls for attachment to a substrate;  
and  
at least one external reversing bend.

12. The semiconductor heat spreader of claim 11 wherein the feet are selected  
from an arched foot, a stand-off foot, a slotted stand-off foot, a toed foot, a stand-off toed  
10 foot, a flat foot, a slotted flat foot, a zigzag foot, a box foot, and a combination thereof.

13. The semiconductor heat spreader of claim 11 wherein the feet are formed to  
accommodate respective set volumes of adhesive therebeneath for attaching the  
semiconductor heat spreader to a substrate.

14. The semiconductor heat spreader of claim 11 further comprising an  
15 electromagnetic interference shield for the channel.

15. The semiconductor heat spreader of claim 11 further comprising an additional  
unitary metallic plate configured as a unitary auxiliary heat spreader for attachment on top of  
the semiconductor heat spreader.

16. The semiconductor heat spreader of claim 15 further comprising attachment  
20 means for attaching the unitary auxiliary heat spreader to the semiconductor heat spreader,  
the attachment means being selected from tabs, locking tabs, deformable sides, side ledges,  
side clips, clip bosses, center clips, side arms, and a combination thereof.

17. The semiconductor heat spreader of claim 11 further comprising an integral  
auxiliary heat spreader formed from the unitary metallic plate, located on top of the panel,  
25 and having the physical characteristics of being formed in a unitary metal forming process.

18. The semiconductor heat spreader of claim 11 wherein the unitary metallic  
plate has the physical characteristics of being formed in a unitary metal forming process and  
a cross-sectional profile that is substantially constant in at least one horizontal direction.

19. A semiconductor heat spreader comprising a unitary metallic plate having:  
a panel;

channel walls depending from opposite sides of the panel to define a semiconductor  
receiving channel between the channel walls and the panel;

5 at least two feet extending from respective channel walls on opposite sides of the  
panel for attachment to a substrate, the feet being:

selected from an arched foot, a stand-off foot, a slotted stand-off foot, a toed  
foot, a stand-off toed foot, a flat foot, a slotted flat foot, a zigzag foot, a  
box foot, and a combination thereof; and

10 formed to accommodate respective set volumes of adhesive therebeneath for  
attaching the semiconductor heat spreader to a substrate;

a cross-sectional profile that is substantially constant in at least one horizontal  
direction;

the physical characteristics of being formed in a unitary metal forming process; and

15 at least one external reversing bend.

20. The semiconductor heat spreader of claim 19 further comprising:

an additional unitary metallic plate configured as a unitary auxiliary heat spreader for  
attachment on top of the semiconductor heat spreader and having the physical  
characteristics of being formed in a unitary metal forming process; and

20 attachment means for attaching the unitary auxiliary heat spreader to the  
semiconductor heat spreader, the attachment means being selected from tabs,  
locking tabs, deformable sides, side ledges, side clips, clip bosses, center clips,  
side arms, and a combination thereof.

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